

## New Species of the Genus *Eurytoma* from California

(Hymenoptera : Eurytomidae)

ROBERT E. BUGBEE

*Department of Biology, Allegheny College, Meadville, Pennsylvania*

The following two new species and one subspecies were included in a large sample of specimens sent to me for determination by Mr. D. Charles Dailey of Davis, California. The new material was collected and reared by him from six species of cynipid galls occurring on oaks (*Quercus*) in the central valley of California.

### *Eurytoma foligalla* Bugbee, new species

(Fig. 3)

FEMALE.—Length 2.7 mm (average 2.9, range 2.3–4.0). Black except for yellow scape, light brown to brown wing veins, and femora and tibiae which may vary from all orange yellow, to yellow on distal and proximal extremities only. Pile on face silvery white. Abdomen 1.5 mm in length (average 1.5, range 1.1–1.9); shape, deeply oval to circular from lateral view; lateral compression moderate; wide sixth tergum 0.62 mm (average 0.57, range 0.47–0.70) at widest point; lateral surface of sixth with fine scaling that thins out dorsally, but extends over dorsal surface covering up to anterior one-half of surface; ninth tergum, short, pointed, and 0.13 mm in length (average 0.17, range 0.12–0.22) with small, oval yellow cercus on either side; ninth tergum and ventral valves extend upward at about 45 degrees from horizontal axis of abdomen. Internal genitalia average 1.4 mm (1.1–1.7) in length and 1.1 mm (0.90–1.3) in height; dorsal valves narrow and black for horizontal length but turn dorsally, anteriorly, with ventral valves at approximately a right angle; stylet arch in vertical plane. Propodeum with wide median furrow narrowing gradually ventrally; central carina complete to base of furrow or limited to upper one-third to one-half; lateral surfaces irregularly ridged and punctate giving rough surface. Lower face not striate. Antennal flagellum filiform with first five segments truncate distally and longer than wide, and terminal unit of three segments, with most proximal separated from two closely fused distal segments by shallow but distinct annulation. Marginal and postmarginal veins of wings linear, marginal 0.27 mm (average 0.30, range 0.22–0.35) and postmarginal 0.25 mm (average 0.23, range 0.17–0.30) in length, stigmal club small and usually rectangular.

MALE.—Length 2.4 mm (average 1.8, range 1.5–2.5). Pile on face silvery white. Flagellum of antenna with five pedicellate, dorsally produced segments and terminal unit of two closely fused segments. Legs with black infuscation on all femora and tibiae, but occasionally front tibiae all yellow.

TYPES.—*Holotype female* and allotype are from FOLSOM LAKE, PLACER COUNTY, CALIFORNIA, emerged 20 and 24 May 1962 from *Callirhytis pomiformis* (Ashm.), (bisex. generation), on *Q. wislizeni*. Paratypes include 15 females and 65 males, from the same locality, host gall and

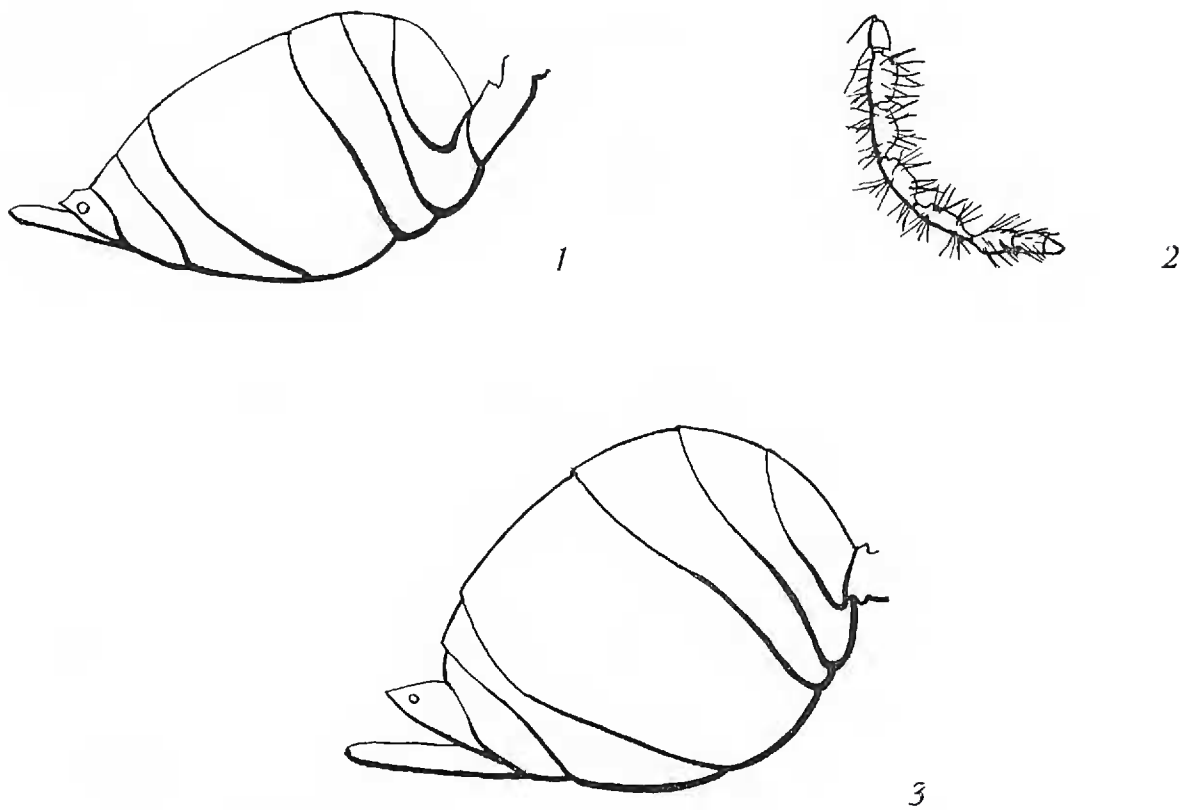


FIG. 1. Abdomen, lateral view, female, *Eurytoma flavifacies* Bugbee. FIG. 2. Flagellum of antenna, male, *Eurytoma flavifacies* Bugbee. FIG. 3. Abdomen, lateral view, female, *Eurytoma foligalla* Bugbee.

oak, but emergence dates ranged from 14 and 29 April, 1, 20, 22, 24, and 27 to 29 May, 2 June 1962 and 21 February 1967. Types in the United States National Museum, Washington, D. C. with paratypes in the Bugbee collection, Meadville, Pennsylvania and in the University of California at Davis. Additional paratypes include: Rocklin, Placer County, California, 13 females, 7 males, emerged 5 December 1966, 16 and 22 April 1962 and 3 May 1962, from galls of *Antron douglasii* (Ashm.) on *Q. lobata*, and 1 female, 3 males, emerged 12 and 16 April 1962, and November and December 1961 from galls of *Disholcaspis eldoradensis* (Beuten.) on *Q. lobata*; Folsom Lake, Placer County, California, 10 females, 4 males, emerged December 1961, 19 and 21 April, and 27 May 1962 from galls of *Antron echinus* (Ashm.) on *Q. douglasii*, and 2 females reared March 1962 from galls of *Besbicus multipunctatus* (Beuten.) on *Q. douglasii*.

HOSTS.—*Callirhytis pomiformis*, bisexual generation on *Q. wislizeni*; *Antron douglasii* on *Q. lobata*; *A. echinus* and *Besbicus multipunctatus* on *Q. douglasii* and *Disholcaspis eldoradensis* on *Q. lobata*.

RANGE.—Known only from the Sierran foothills east of Sacramento, California.

REMARKS.—In the key to the females of the genus *Eurytoma* (Bugbee

1967) this new species would run to *E. querciglobuli* (Fitch). It differs from *E. querciglobuli*, however, in averaging noticeably smaller in practically all of its dimensions, especially the very short and stubby ninth abdominal tergum. The sixth abdominal tergum is wider both dorsally and laterally than the fifth, in contrast to the condition in *E. querciglobuli* where the fifth and sixth are about equal in width dorsally.

**Eurytoma flavifacies** Bugbee, new species

(Figs. 1 and 2)

FEMALE.—Length 2.8 mm (average 3.0, range 2.4–3.4). Black except for yellow tegula, scape, frons from base of scape, ventrolaterally to below compound eye and surrounding a black spot just above clypeus, narrow band along anterior and posterior margin of compound eyes, legs except for black spot on outer face towards distal end of hind femur or some black may occur on base of fore femur and in middle of mid and hind femur and sometimes on middle of mid tibia, medial edge and base of fore coxa and mid coxa, exposed tips of ventral valves and dark brown wing veins. Abdomen oval from lateral view and with slight lateral compression so it appears quite plump; 1.6 mm in length (average 1.5, range 1.3–1.7); wide sixth tergum 0.60 mm (average 0.62, range 0.57–0.67) at widest point; sculpturing on lateral surface of sixth recedes towards anterior margin not reaching dorsal surface; ninth tergum short and blunt, 0.10 mm (average 0.12, range 0.07–0.15) in length. Abdominal petiole about half the length of the hind coxa. Internal genitalia widely spread; wide dorsal valves are black along lower ventral margin for about three-fourths horizontal length; stylet arch oblique; total length averages 1.5 mm (1.4–1.6) and height averages 0.85 mm. Propodeum with shallow concavity containing wide median furrow, furrow complete to base or indicated by lateral carina in upper one-third only; central carina distinct in upper one-third, and below, surface crossed by irregular horizontal ridges; lateral areas narrow and surface irregularly ridged. Head with wide, smooth, shiny area from below angle of compound eye to base of mandible. Antennal flagellum six segmented; first longer than wide; two to five about equal in length and width and moniliform; sixth separated by shallow annulation from two closely fused terminal segments. Wing veins with marginal wider than postmarginal; marginal 0.37 mm (average 0.35, range 0.32–0.40) and postmarginal 0.22 mm (average 0.17, range 0.15–0.22) in length.

MALE.—Length 2.0 mm (average 1.8, range 1.3–2.0). Black except for yellow scape, tegula, frons, and median surface of fore coxa; front legs may be all yellow, or black infuscation on all femora and mid and hind tibia; mid coxa may be all yellow, black, or combination of both. Flagellum with first four segments longer than wide, dorsally raised, and pedicellate; fifth longer than wide and separated from two closely fused terminal segments by deep annulation instead of short pedicle. Wing veins dark brown and relationships of lengths of veins about as in female.

TYPES.—*Holotype female* and allotype from 5 MILES S.W. OF MADISON, YOLO COUNTY, CALIFORNIA. Emerged 9 and 20 April 1967 from gall of *Andricus chrysolepidicola* (Ashm.) on *Q. douglasii*. Paratypes 16 fe-

males and 7 males from same locality. Emerged 3 to 22 April 1967, from same host gall maker and oak. Holotype and allotype in United States National Museum, Washington, D. C. Paratypes in Bugbee collection, Meadville, Pennsylvania and University of California at Davis.

HOST.—From gall of *Andricus chrysolepidicola* (Ashm.) on *Q. douglasii*.

REMARKS.—This new species runs to *Eurytoma flavovultus* Bugbee in the key to *Eurytoma* (Bugbee 1967). It may be easily distinguished from *E. flavovultus* by the very short stubby ninth tergum, the dark brown wing veins with the much wider marginal vein in relation to the linear postmarginal and the dark brown antennae.

### ***Eurytoma californica nana* Bugbee, new subspecies**

FEMALE.—Length 2.7 mm (average 2.5, range 1.9–3.0). Black except for yellow tegula and lower half of scape, yellow extremities of femora and tibia and brown wing veins. Abdomen deeply oval in lateral view; 1.2 mm (average 1.3, range 1.2–1.4) in length; sculpturing covers lateral surface of sixth tergum but recedes towards anterior margin on dorsal surface; ninth tergum very short and stubby, 0.07 mm (average 0.07, range 0.05–0.10) in length; ninth tergum and tips of ventral valves extend dorsally forming angle of 45–50 degrees with the horizontal axis of the abdomen. Internal genitalia average 1.2 mm in length and 1.0 mm in height; narrow dorsal valves black for entire length and with ventral valves turning dorsally, anteriorly, at approximately a right angle; stylet arch in a vertical plane. Propodeum with shallow, wide, complete median furrow that narrows gradually ventrally; central carina complete to base; lateral areas irregularly ridged, with punctations between. Head showing a few weak striae converging on clypeus from below and between compound eyes. Flagellum of antenna filiform and consisting of five, longer than wide, distally truncate segments, and sixth segment separated by distinct annulation from terminal unit of two closely fused segments. Black on femora and tibia of all legs, sometimes present as a splotch on larger specimens or more diffuse in smaller specimens. Wing veins with marginal wider and usually twice as long as postmarginal; marginal 0.25 mm (average 0.27, range 0.25–0.30) and postmarginal 0.12 mm (average 0.12, range 0.11–0.15); stigmal club approximately square.

MALE.—Length 3.0 mm (average 2.0, range 1.5–3.0). Black except for yellow tegula and lower one-half or one-third of scape; leg color quite variable but often all femora and tibia with brown to black infuscation and only extremities yellow; front and mid coxa may be yellow or only front coxa; less often front legs all yellow and black present as spots on mid and hind femora and tibia. Antenna with flagellum of five pedicellate, dorsally raised, longer than wide segments; sixth segment separated from the terminal segment by deep annulation. Wing veins brown and length relationships same as in the female.

TYPES.—*Holotype female* and allotype from FOLSOM LAKE, PLACER COUNTY, CALIFORNIA. Emerged 3 June and 24 May 1962 from galls of *Callirhytis pomiformis* (bisexual generation), on *Q. wislizeni*. Para-

types, 14 females and 6 males from same locality, emerged in March, April and May 1962 from the same host gall on the same oak species. Types in United States National Museum, Washington, D. C. Paratypes in Bugbee collection, Meadville, Pennsylvania and University of California at Davis.

HOST.—*Callirhytis pomiformis* (Ashm.) (bisexual generation).

REMARKS.—This new subspecies differs from *Eurytoma californica* Ashmead chiefly in its average smaller dimensions in all of the characteristics measured (total length, length of abdomen, sixth and ninth terga, wing veins, and internal genitalia). Wing veins are lighter brown and the sculpturing on the surface of the broad sixth abdominal tergum spreads onto the anterior dorsal surface.

#### LITERATURE CITED

- BUGBEE, R. E. 1967. Revision of the chalcid wasps of the genus *Eurytoma* in America north of Mexico. Proc. U. S. Nat. Mus., 118 (3533): 433-552.

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#### SCIENTIFIC NOTE

**Occurrence of *Labidura riparia* (Pallas) in Baja California, Mexico (Dermaptera: Labiduridae).**—On 9 April 1968, the Riparian earwig, *Labidura riparia* (Pallas) was collected near kilometer marker 100, highway number 5, south of Mexicali, Baja California, Mexico, by William Clark and Gene Ralston. Twenty specimens were collected about 10 a.m. The site was below the highway on the east side at an elevation near sea level. There was a small puddle of water here at the end of a highway culvert. The earwigs were collected around the puddle where the soil was damp. All of the specimens were collected under flat rocks. There was no vegetation in the immediate area.

No mention could be found in the literature of *Labidura riparia* being collected in Baja California, Mexico.

Helfer (1963, How to Know the Grasshoppers, Cockroaches and Their Allies, Brown, Dubuque, Iowa) states that *Labidura riparia* has been found from Texas to North Carolina. Schlinger *et al.* (1959, Jour. Econ. Ent., 52(2): 247) mentions that this species is known from Alabama, Florida, Georgia, Texas, and Louisiana. Schlinger *et al.* also reports that the first collection of *Labidura riparia* in California was at Calexico on 21 November 1952. Nutting (1960, Pan-Pac. Entomol., 36: 203) documented several collection sites in Arizona for *Labidura riparia*. The first collection was at Yuma on 24 July 1952.

The authors would like to thank Irving J. Cantrall for the identification of *Labidura riparia*. Two specimens were sent to Dr. Cantrall, University of Michigan, and the remaining specimens are in the collections of Clark and Ralston.—  
WILLIAM H. CLARK AND GENE L. RALSTON *University of Nevada, Reno.*